REMARKS

Claims 1, 2, 4-14 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the Examiner was unclear in the claims as to what the term "evacuation possibility" means. In the newly added claims 11-22, Applicant has recited the possibility of the preceding vehicle *deviating* from a state of being in a preceding position relative to the own vehicle and therefore, Applicant believes it is clear that the claims are directed to a system that judges when it becomes more likely or conversely not as likely that the preceding vehicle will depart (deviate) from being classified as being a preceding vehicle. In other words, the preceding vehicle will no longer be ahead on the travel path of the own vehicle as is the case, when a preceding vehicle makes a turn, etc.

New claims 23-28 recite the present invention in terms of including a means that judges the evacuation of the preceding vehicle. Applicant believes that such claims clearly describe the present invention and in particular, the action of judging an evacuation (departure) of the preceding vehicle.

Withdrawal of this ground of rejection is in order.

With respect to claim 2, the Examiner again reiterates that the limitations with respect to first, second and third own vehicle traveling paths indicate three different paths but the specification

or the drawings do not clearly disclose three distinct paths. Applicant addressed this in detail in the last amendment and the Examiner, in the current Office Action, has not addressed Applicant's prior remarks. More specifically, three different traveling paths are clearly described in the specification and the drawing figures - The specification (Fig. 3) clearly recites that an own traveling path A is calculated, an own traveling path B is calculated and an own traveling path C is calculated based on the paths A and B. Thus, three separate traveling paths are clearly recited in the specification and therefore, the present rejection is improper and should be withdrawn. The Examiner's attention is drawn to paragraph [0047] in the printed publication of the present application where three traveling paths are mentioned.

Withdrawal of this rejection is in order and is requested at this time.

The other issues raised by the Examiner in the rejection based on section 112 have been addressed and overcome by way of this amendment.

Based on an interview conducted with the Examiner, Applicant has amended the claims to include features expressed as "means-plus-function", which is a proper manner of presenting claim limitations, and has been done so in a clear and concise manner.

Claims 1, 2 and 4-14 stand rejected under 35 U.S.C. 102(b) as being anticipated by Lemelson et al.

Applicant has provided a new claim 11 to recite a vehicle surroundings monitoring apparatus that includes: (a) first means for detecting at least solid object information ahead of an

own vehicle; (b) second means for recognizing a preceding vehicle traveling in front of the own vehicle based on the solid object information; (c) third means for estimating a travel path for the own vehicle on a road ahead; and (d) fourth means for judging a possibility that the preceding vehicle will deviate from a state of being in a preceding position relative to the own vehicle based on the position of the preceding vehicle relative to the own vehicle and based on coordinates of the travel path for the own vehicle, as well as based on information of a solid object other than the preceding vehicle itself and which is in vicinity of the preceding vehicle, wherein if the fourth means determines that there is a possibility that the preceding vehicle will deviate from the state of being in the preceding position relative to the own vehicle, a signal is generated.

Applicant respectfully contends that the above recited fourth means is neither disclosed nor suggested by the cited reference. More specifically, the present invention is focused on providing a means for judging a possibility that the preceding vehicle will deviate from a state of being in a preceding position relative to the own vehicle based on the position of the preceding vehicle relative to the own vehicle and based on the coordinates of the travel path of the own vehicle. In addition, the possibility is judged based on information of a solid object other than the preceding vehicle and is in the vicinity of the preceding vehicle. If the fourth means determines that there is a possibility that the preceding vehicle will deviate from the state of being in the preceding position relative to the own vehicle, a signal is generated.

In direct contrast, Lemelson is a collision avoidance type system that while it is able to detect an object in front of the own vehicle and even classify it as a vehicle based on fuzzy logic and the like, Lemelson is *not* directed to a system that has a means for judging the possibility that the

preceding vehicle (previously classified as being such) will *deviate* from its position as being a preceding vehicle. As described in the Background and Summary sections of the present application, the technology of recognizing a preceding vehicle is very important and the behavior of the preceding vehicle should be carefully monitored since a failure to catch a deviating movement by the preceding vehicle can result in the traveling control becoming awkward and inconvenient for the driver of the own vehicle.

An object of the present invention and as embodiment in the claims is to provide a monitoring apparatus that is capable of accurately and continually monitoring a preceding vehicle and in particular, monitoring the possibility that the preceding vehicle deviates from a travel path of the own vehicle and thus, no longer remains a preceding vehicle.

Applicant respectfully contends that this feature is different from a simple collision avoidance system, such as Lemelson, where an ahead object is identified and then, the necessary avoidance steps are taken to cause the own vehicle to avoid a collision with the ahead object. In no way does the Lemelson system judge/determine the possibility that the preceding vehicle will deviate from the travel path of the own vehicle and thus no longer be a preceding vehicle. As described in the specification, a "preceding vehicle" has a precise meaning and is different than other types of objects that lie ahead.

In addition, claim 11 recites the information that the fourth means bases the judgment on and in particular, the fourth means bases the judgment on the position of the preceding vehicle relative to the own vehicle based on the position of the preceding vehicle relative to the own vehicle

and based on coordinates of the travel path for the own vehicle, as well as based on information of a solid object other than the preceding vehicle itself and which is in the vicinity of the preceding vehicle. There is simply no component in the Lemelson system that bases a judgment on the above information for the purposes of generating a likelihood that an event will occur, e.g., the deviation of the preceding vehicle from the travel path of the own vehicle.

Claims 12-19 should now be allowed as depending from what should now be an allowed independent claim 11 and because these claims contain patentable subject matter in and of themselves. For example, claim 12 recites that the third means estimates a new travel path of the own vehicle based on a first travel path of the own vehicle which is estimated based on the road information and based on a second travel path that is estimated based on the traveling condition of the own vehicle. This feature is clearly shown in Fig. 3 of the present invention and Applicant respectfully submits that Lemelson does not disclose the determination of a traveling path of the own vehicle based on two travel paths that are determined in the manner recited in the claim. Claim 13 recites that the first travel path is obtained based on lane markers and side walls and the second travel path is obtained based on yaw rates of the own vehicle. Once again, Lemelson fails to disclose using this type of information to calculate two separate traveling paths which are then used to determine a third final travel path.

Claim 14 recites that the fourth means judges the deviation possibility according to a frontal distance of the preceding vehicle from the own vehicle and a separation of the preceding vehicle from the travel path of the own vehicle and claim 15 recites that the fourth means judges the deviation possibility by judging that when the preceding vehicle is farther than a preestablished

distance, there is no possibility of deviation of the preceding vehicle from the travel path of the own vehicle. Since Lemelson fails to be concerned with and clearly fails to judge a deviation possibility, the features of the fourth means as recited in claims 14 and 15 are clearly not disclosed nor suggested by the reference.

The features of claims 16-19 are likewise neither disclosed nor suggested by Lemelson.

Claim 20 should be allowed for the same reasons why claim 1 should be allowed.

Claim 21 recites a system similar to claim 1 and includes a third means for estimating a final travel path for the own vehicle on a road ahead, wherein the third means estimates the final travel path based on a first travel path that is calculated based on solid objects that define the road ahead and a second travel path that is based on yaw rates of the own vehicle. For the reasons stated above with respect to claim 2, Applicant respectfully submits that this feature is neither disclosed nor suggested by the Lemelson reference.

The system of claim 21 also recites a fourth means for judging a possibility that the preceding vehicle will deviate from a state of being in a preceding position relative to the own vehicle based on relative position of the preceding vehicle and coordinates of the final travel path of the own vehicle and if the fourth means calculates that the respective coordinates of the preceding vehicle and the travel path of the own vehicle is less than a predetermined value, then a judgment counter TIME is initialized according to a position of the preceding vehicle, as well as a position of any detected solid objects other than the preceding vehicle. The fourth means compares the judgment counter TIME with a threshold value and if the judgment counter TIME is greater than the

threshold value, then the fourth means generates a signal to indicate that there is a possibility that the preceding vehicle will deviate from its position as being in the preceding vehicle state.

Applicant respectfully submits that the above features of claim 21 are neither disclosed nor suggested by the Lemelson reference since, once again, Lemelson is not concerned with a means for judging a possibility that the preceding vehicle will deviate from the own traveling path and clearly, does not include a system that utilizes a judgment counter according to a position of the preceding vehicle and for the purposes of determining the possibility that the preceding vehicle will deviate from its position as being a preceding vehicle.

Claim 22 should be allowed as depending from what should be an allowed independent claim 21 and also, Lemelson does not describe a system where based on a determined that there is no possibility of deviation of the preceding vehicle, a component (the claimed fourth means) judges whether a turn signal switch is on and in the case where it is judges that the turn signal switch is not on, the fourth means then compares whether a steering wheel angle is greater than a threshold value and if not, the fourth means calculates a present travel path of the own vehicle based on the final travel path and a previous final travel path calculated prior to calculating the current final travel path. This feature is clearly lacking and not contemplated by Lemelson.

In addition, Applicant has added claims 23-28 in the present amendment.

Independent claim 23 recites a vehicle surroundings monitoring apparatus that includes forward-traveling object judging means for judging whether there is any forward-traveling object, which travels in the same direction as the own vehicle, other than the preceding vehicle based on the

solid object information. The apparatus also includes first judgment counter setting means for setting a judgment counter in response to a distance in the traveling direction between the preceding vehicle and the own vehicle and a state of deviation of the preceding vehicle from the traveling path of the own vehicle, in a case where the preceding vehicle has been recognized, in order to judge the evacuation as the preceding vehicle. A judgment counter correcting means is provided for correcting the judgment counter towards the evacuation side as the preceding vehicle in a case where any forward-traveling object other than the preceding vehicle has been judged; and a preceding vehicle evacuation judging means is provided for comparing the corrected judgment counter value and a preset value to judge the evacuation as the preceding vehicle.

Claim 23 should be allowed for many of the same reasons as to why new claim 11 should be allowed and in particular, new claim 23 recites the precise manner of how to judge the evacuation of the preceding vehicle. Lemelson completely lacks this feature since, as described above, Lemelson is not concerned with judging the evacuation of the preceding vehicle but merely monitors and detects objects ahead that are to be avoided by a collision detector system.

In particular, claim 23 recites that the apparatus includes a first judgment counter setting means that sets a judgment counter in order to judge the preceding vehicle and a judgment counter correcting means for correcting the judgment counter towards the evacuation side as the preceding vehicle in the instance where a forward-traveling object other than the preceding vehicle is detected. In addition, there is a judging means for comparing the corrected judgment counter value and a preset value to judge the evacuation.

Accordingly, the present claims now set forth the manner in which the present invention makes it possible to judge the possibility of evacuation of the preceding vehicle as requested by the Examiner. In the amended form, the claims clearly set forth the subject matter of the present invention and more particularly, recite how the evacuation of the preceding vehicle is judged (e.g., the use and setting of a judgment counter, and a correcting means for the counter, and judging means that compares the corrected counter value and a preset value). Such calculations and judging steps are neither present nor contemplated in the Lemelson apparatus since this reference is directed to entirely different function of detecting an object and avoiding a collision with the object by taking decisive action.

Consideration and allowance of claim 23 are respectfully requested at this time.

Claims 24-28 should be allowed as depending from what should be an allowed independent claim 23 and on the basis that these claims contain allowable subject matter in and of themselves. Claim 24 recites that the travel path estimating means estimates the traveling path of the own vehicle is based on the road information as a first traveling path of the own vehicle, estimates a second traveling path based on the yaw rate of the own vehicle, and estimates a third traveling path by synthesizing the first and second traveling paths. These feature are lacking in the Lemelson reference.

Consideration and allowance of these claims are earnestly solicited.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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